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THE STAGING AND PHASING  
OF URBAN RESIDENTIAL LANDS IN  
OTTAWA-CARLETON: 1980-2001

**DRAFT**

REGIONAL MUNICIPALITY OF  
OTTAWA-CARLETON  
PLANNING DEPARTMENT  
POLICY & PROGRAM DIVISION  
MAY 1981



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## PART 1

### 1. INTRODUCTION

#### 1.1 PURPOSE OF STUDY

This study reviews land required for new housing in Ottawa-Carleton for the 1980-2001 period with a view to recommending orderly staging policies for the lands currently designated for development.

#### 1.2 NEED FOR THE STUDY

The Official Plan, approved by Regional Council on 9 Oct 74 provided sufficient land for a population of between 965,000 and 980,000 persons at the densities and household sizes projected at the time. The distribution of the population was to be:

- 630,000 persons inside the inner limit of the Greenbelt;
- 100,000 persons in the rural areas;
- 100,000 in both the West and South Urban Communities and;
- 35,000 to 50,000 persons in the East Urban Community

The lands inside the Greenbelt, the lands in the West and East Urban Communities and the lands in the Barrhaven sector of the South Urban Community were approved as the first stage of development. The remainder of the lands in the South Urban Community were approved as the second stage of development, but were to be available no later than 1980.

However, subsequent Ontario Municipal Board (OMB) and Cabinet decisions increased the amount of land available for urban development by adding:

- 975 ha (2275 acres) in the East Urban Community<sup>1</sup> and;
- 178 ha (440 acres) in the West Urban Community<sup>2</sup>

These additions result in sufficient land for approximately 1,050,000 persons in Ottawa-Carleton based on the densities and household sizes in the 1974 Official Plan. However, the staging of the lands has changed little from the plan adopted by Council. For example, the South Urban Community, which previously required an amendment to the plan before it could proceed, now requires the approval of Council before regional services are provided. Decisions regarding staging of the East Urban Community and the development of the Energy Conserving Community may be made at the time of the preparation of the respective secondary plans for the communities.

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<sup>1</sup>In adopting Amendment 17, Regional Council further expanded the designation of the EUC by adding 670 ha of land including 120 ha for residential purposes.

<sup>2</sup>The land designated in the WUC is for an Energy Conserving Community whose 6000-7000 persons are to be included in the total population of 100,000.



As a result of the increased amount of land designated and recent population projections which indicate that the population level envisaged in the official plan may not be realized within the time framework of the official plan<sup>1</sup>, Council requested the Planning Department to undertake this review<sup>2</sup>.

### 1.3 REPORT FORMAT

This study addresses two major issues. These are:

- determining if the lands designated for first stage development are adequate to accommodate the anticipated growth in population and households and, if they are not, when additional lands should be brought on stream;
- determining whether any of the lands currently designated for development in the first stage should be phased.

Part 2 addresses the question of when serviced lands additional to those now designated for first stage development will be required.

Part 3 addresses the question of where first stage lands may be phased based on the overall demand/supply situation, local market areas, and how each area is proposed to be serviced.

This study stands by itself. However, it relies heavily on several recently published studies which were prepared as input to this report. These studies include:

- 1980 Vacant Residential Land Supply Study
- Vacant Land 1978: Regional Municipality of Ottawa-Carleton
- Population Forecasts Ottawa-Carleton 1976-2001
- Residential Land Supply: Registered Lands Report (all recent editions)
- Mobility in Ottawa-Carleton 1971-1976

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<sup>1</sup>The Official Plan was based on the assumption that the population in Ottawa-Carleton could increase to one million within a 25 to 40 year period or between 1996 and 2015.

<sup>2</sup>Council's resolution is attached as Annex 'A'.



## PART 2

## 2. THE NEED FOR AND STAGING OF ADDITIONAL LANDS (THE SOUTH URBAN COMMUNITY)

### 2.1 PRESENT STATUS OF THE ADDITIONAL LANDS

The lands designated as the South Urban Community with the exception of Barrhaven are the only lands designated in the Regional Official Plan for which development is not immediately contemplated. The timing of the South Urban Community is controlled by the extension of regional services. However, the Cabinet decision provides that these lands be retained in agricultural use for as long as possible. This implies that these lands will be developed as the second stage of development as dictated by the need for additional lands above and beyond those already designated for immediate development.

### 2.2 EXISTING REGIONAL OFFICIAL PLAN STAGING POLICIES & IMPLICATIONS

#### 2.2.1 Existing policies

The staging objectives of the Regional Official Plan are found in Section 2.2.3 and are as follows:

- "- to ensure the provision of all necessary services and facilities where growth is taking place;
- to encourage the development of employment centres at locations identified in this plan integrated in the newly developing communities;
- to encourage the use of public transit,
- to provide land for the various types of development contemplated by this plan including the various types of residential development in appropriate amounts and locations at all times."

#### 2.2.2 Housing for families is of first importance

The Regional Official Plan specifies that, among the objectives of staging, providing of land for the housing of families is the prime objective. The official plan also includes policies relating to the minimum proportion of units in specified parts of the urban area which should be ground orientated housing.<sup>1</sup> Furthermore, since ground orientated housing (particularly low density housing) is usually developed first when a new area is serviced the demand for and supply of ground orientated units is the prime determinant of when additional lands should be serviced.

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<sup>1</sup>Ground Orientated and Non-Ground Orientated terminology is used in the Official Plan. Typically, ground orientated units are single-detached, semi-attached or row housing units, while non-ground orientated housing are essentially apartment structures. In some instances, e.g. stacked town housing, the ground floor units could be classified as ground orientated.

### 2.3 THE DEMAND DETERMINANTS

The prime determinants of future land needs for housing purposes are the growth in the population and the rate at which new households are created. Also important but to a lesser extent is the type of household formed, the type of housing unit required and a vacancy factor to allow for some degree of mobility.

#### 2.3.1 Population growth is slower than previously expected

The Regional Official Plan is based on the assumption that the population of the RMO could increase to one million persons within 25 to 40 years from the date of its adoption. This assumption was predicated on a continuation of the population growth rate experienced in the 1961 to 1971 period. As Table 1 indicates, population growth is not taking place as quickly as was then expected.

Table 1

	POPULATION GROWTH AND RATE OF GROWTH RMO: 1961-1980				
	<u>1961</u>	<u>1966</u>	<u>1971</u>	<u>1976</u>	<u>1980*</u>
<u>Population</u>	358,410	413,692	471,931	520,450	548,995
<u>Average annual rate of growth</u>		3.1%	2.8%	2.1%	1.1%

Change in population is a function of births, deaths and migration. An analysis of the basic demographic factors affecting population growth in the RMO indicates that declining fertility rates and lower net migration levels were the principal causes of the decline in the growth rate.

In order to determine possible future population levels a series of population forecasts were developed and published in Population Forecasts Ottawa-Carleton 1976-2001. A total of seven population scenarios were developed as summarized in Table 2. The population forecasts range from a high of 782,000 to a low of 574,000 in the year 2001 and

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\*Represents a four year population growth rate.



Table 2

OTTAWA-CARLETON: POPULATION<sup>1</sup> AND EMPLOYMENT GROWTH, 1976-2001

1976-2001 POPULATION CHANGE ANNUAL AVERAGE <sup>2</sup> ..	ANNUAL NET CONSTANT MIGRATION	1976-2001 EMPLOYMENT GROWTH ANNUAL AVERAGE <sup>2</sup>		1976	1981	1986	1991	1996	2001
		A	B						
2,100	0	2,200	3,100	520,515	543,000	561,000	572,000	576,000	574,000
4,500	2,000	3,400	4,400	520,515	554,000	583,000	606,000	623,000	633,000
5,700	3,000	4,000	5,000	520,515	559,000	594,000	623,000	646,000	663,000
6,900	4,000	4,500	5,600	520,515	564,000	605,000	641,000	669,000	693,000
8,100	5,000	5,100	6,200	520,515	570,000	616,000	658,000	693,000	722,000
9,300	6,000	5,700	6,900	520,515	575,000	628,000	675,000	716,000	752,000
10,500	7,000	6,200	7,500	520,515	580,000	639,000	692,000	739,000	782,000
A. 65% Labour Force Participation Rate and 6% Unemployment Rate									
B. 70% Labour Force Participation Rate and 6% Unemployment Rate									
1 All forecasts rounded to nearest thousand.									
2 Rounded to nearest hundred									

A. 65% Labour Force Participation Rate and 6% Unemployment Rate

B. 70% Labour Force Participation Rate and 6% Unemployment Rate

1 All forecasts rounded to nearest thousand.

2 Rounded to nearest hundred

represent varying levels of migration which in turn are related to various rates of job creation in the Region. The scenario based on zero migration is unlikely to occur and thus population forecasts from 633,000 to 782,000 represent a realistic range of population growth.

As it is unlikely that the population could exceed these limits, a population range based on a high average annual population increase of 10,500 persons/year and a low average annual population increase of 4,500 persons/year is used throughout this study to correspond to the realistic population ranges indicated above.

### 2.3.2 Household growth and the demand for ground orientated housing is expected to increase but at a decreasing rate over the next twenty years

The rate at which new households are formed depends primarily on the age structure of the population. The likelihood of an individual to be the head of a household is known as the propensity to form a household.

In the recent past the propensity to form households for every age group increased mainly due to an increase in single person households. The factors affecting propensities are highly complex interrelationships of demographic, social and economic circumstances such as age, sex, marital status, affordability of housing, and mobility. Research into future propensities is not consistent, therefore, for the purpose of this study, future propensities for each age group were held constant at their 1976 levels. The overall propensity, however will change each year due to a changing age structure.

The projected population in each age group was multiplied by the 1976 propensity to create the number of households in that age group. These were then summed to arrive at a total number of households for each population scenario. Subsequently, the demand was divided into ground orientated and non-ground orientated units on the assumption that the 1976 propensity to form ground orientated and non-ground orientated households by age group would be maintained. These results are summarized in Tables 3 and 4.<sup>1</sup>

### 2.3.3 Vacant Units are required for mobility

The level of vacancies has a significant effect on the equilibrium of the housing market in that it facilitates a degree of mobility within the housing stock. Without a sufficiently high vacancy rate, housing prices and rents are forced upwards and pressure increases for the conversion of less intensive housing forms, such as single family units, to higher density forms such as duplexes, triplexes etc.

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<sup>1</sup>The household projection is attached as Annex B.



Table 3a

## HOUSEHOLD PROJECTIONS, RMOC: 1976-2001

AVERAGE ANNUAL POPULATION INCREASE	1976					
	1976	1981	1986	1991	1996	2001
4,500	174,300	197,505	218,493	235,900	249,725	260,938
5,700	174,300	199,149	220,327	241,707	257,888	271,625
6,900	174,300	200,839	225,808	247,638	266,211	282,475
8,100	174,300	202,482	229,421	253,447	274,369	293,153
9,300	174,300	203,762	233,126	259,329	282,691	304,020
10,500	174,300	205,808	236,759	265,210	290,865	314,715

Table 3b

AVERAGE ANNUAL INCREASE IN HOUSEHOLDS, RMOC: 1976-2001

AVERAGE ANNUAL POPULATION INCREASE	1976-1981	1981-1986	1986-1991	1991-1996	1996-2001	1976-2001
4,500	4,641	4,198	3,481	2,765	2,243	3,466
5,700	4,970	4,236	4,276	3,236	2,747	3,893
6,900	5,308	4,994	4,366	3,715	3,253	4,327
8,100	5,636	5,388	4,805	4,184	3,757	4,754
9,300	5,892	5,873	5,241	4,672	4,266	5,189
10,500	6,302	6,190	5,690	5,131	4,770	5,617



Table 4

HOUSEHOLD PROJECTIONS BY TYPE, RMOC; 1976-2001

AVERAGE ANNUAL POPULATION INCREASE	GROUND ORIENTATION	1976	1981	1986	1991	1996	2001
4,500	Ground Oriented Non-Ground Oriented	108,440 65,860	123,264 74,241	138,107 80,836	151,394 84,506	161,965 87,760	169,086 91,852
5,700	Ground Oriented Non-Ground Oriented	108,440 65,860	124,243 74,906	139,473 80,854	155,108 86,599	167,305 90,583	176,717 94,908
6,900	Ground Oriented Non-Ground Oriented	108,440 65,860	125,249 75,590	142,634 83,174	158,901 88,737	172,749 93,468	193,894 98,581
8,100	Ground Oriented Non-Ground Oriented	108,440 65,860	126,224 76,258	144,871 84,550	162,617 90,831	178,090 96,279	190,966 102,187
9,300	Ground Oriented Non-Ground Oriented	108,440 65,860	127,226 76,536	147,163 85,963	166,419 92,960	183,538 99,153	198,156 105,864
10,500	Ground Oriented Non-Ground Oriented	108,440 65,860	128,204 77,604	149,410 87,349	170,143 95,667	188,887 101,978	205,726 108,987

Although some economists suggest that if housing is viewed as a scarce resource, the optimal vacancy rate is zero, it is suggested the housing market does not function in this manner mainly because of imperfect knowledge, differing growth rates and the physical problems related to moving. A vacancy rate must be provided. The vacancy rate for Ottawa-Carleton was 3.41% and 3.74% in 1971 and 1976 respectively. For the purpose of this report a 3.5% vacancy rate is considered acceptable. This represents approximately 9,500 to 11,200 units in 2001, an increase of roughly between 2,600 and 4,300 units over the 6,885 available but unoccupied units reported in the 1976 census.

#### 2.3.4 Replacements must be found for units lost through demolitions and conversion

##### (i) Demolitions

The Regional Official Plan assumes that approximately 15,000 residential units would be demolished over the period of the plan. Based on a 30 year planning period, this assumption represents approximately 500 units per year and reflects the number of demolitions which took place during the 1970-1973 period, the time during which the plan was prepared (see Table 5).

Table 5

Demolitions by Type <u>Ontario Portion of Ottawa-Hull CMA: 1969-1979</u>				
<u>Year</u>	<u>Total</u>	<u>Singles &amp; Semis</u>	<u>Row</u>	<u>Apartment</u>
1969	483	241	62	180
1970	444	233	82	129
1971	704	231	14	459
1972	605	293	197	205
1973	441	252	45	144
1974	315	195	33	87
1975	111	92	6	13
1976	191	121	39	31
1977	186	130	13	43
1978	196	147	14	35
1979	200	140	12	48



Since the mid-1970s however, the number of demolitions has decreased significantly, averaging around 190 units per year. With the large number of residential parcels that are currently available but not developed and the current trend to neighbourhood preservation stimulated by government programs such as NIP<sup>1</sup>, RRAP<sup>2</sup> and OHRP<sup>3</sup> and private rehabilitation and renovation, the number of demolitions is not expected to increase over current levels.

Accordingly, for the purpose of this report it is assumed that 190 units per year or approximately 4000 units will be required to replace residential units lost through demolition to the year 2001. Based on past trends, it is estimated that two-thirds of these units will be ground orientated, the majority of which will be singles and semi-detached.

#### (ii) Conversions

There are currently three forms of conversions that affect the residential housing stock. These are:

- i) conversion of a large single family home to apartment units;
- ii) conversion of a multi-family structure to a single family structure; and
- iii) conversion of a residential unit to a non-residential use.

Unfortunately there is little or no information on the extent to which conversions occur. In the past, the total number of reported conversions has been insignificant (averaging 17 units per year in the 1977-1979 period). Accordingly, for the purpose of this report it is assumed that the total number of units gained through the conversion of larger homes to smaller units will be balanced by the units lost either through the conversion from apartments to singles or from residential to non-residential uses.

#### 2.4 SUMMARY: BETWEEN 77,000 AND 127,000 NEW DWELLING UNITS WILL BE REQUIRED

Given the assumptions regarding population and household growth and household type, the maintenance of an adequate vacancy factor and a replacement factor, Tables 6 and 7 present a summary of the expected housing demand to the year 2001.

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<sup>1</sup>NIP, Neighbourhood Improvement Program

<sup>2</sup>RRAP, Residential Rehabilitation Assistance Program

<sup>3</sup>OHRP, Ontario Housing Renewal Program

Table 6

Summary of Total Housing Demand, Ottawa-Carleton:  
1980-2001

	4,500 average annual population change	10,500 average annual population change
To accommodate new households	70,395	118,360
To replace demolished units	4,085	4,085
To maintain a 3.5% vacancy level	2,700	4,440
Total Unit Requirement	77,180	126,885

Table 7

Summary of Total Housing Demand by Type, by Period,  
Ottawa-Carleton: 1980-2001

	average annual population change 4,500		average annual population change 10,500	
	Ground oriented	Nonground oriented	Ground oriented	Nonground oriented
<u>1980-1981</u>	4,671	2,838	6,278	3,813
<u>1981-1986</u>	14,190	8,546	20,859	12,198
<u>1986-1991</u>	12,020	6,998	19,501	10,965
<u>1991-1996</u>	9,931	5,380	17,904	9,667
<u>1996-2001</u>	<u>8,169</u>	<u>4,437</u>	<u>16,799</u>	<u>8,900</u>
<u>TOTAL</u>	<u>48,903</u>	<u>28,199</u>	<u>81,341</u>	<u>45,544</u>

## 2.5 SUPPLY DETERMINANTS

This section of the study investigates the number of units which may be built on lands which are currently designated for immediate development on Schedule 'B' of the Regional Official Plan<sup>1</sup> as approved by Council Oct 9, 1974 and modified by the Ontario Municipal Board Issuing Order of Oct 11, 1979. This necessitates a brief review of the existing housing stock, an estimate of the housing potential of vacant residential lands and a review of the redevelopment assumptions contained in the Regional Official Plan. An objective of this section is to ascertain whether sufficient land is designated in the official plan to provide housing for 77,000 to 127,000 additional households.

### 2.5.1 Current housing stock accounts for between 61% and 72% of the region's housing requirement to 2001

Using the 1976 census base, the housing stock of each municipality was estimated as of Dec 31, 1980. This was done using building and demolition permits reported by Statistics Canada. The actual number of dwelling units is probably higher, though not significantly, due to lack of recorded information on units which were available but unoccupied at the time of the 1976 census, and also due to illegal conversions.

Table 8, provides an estimate of the housing stock by municipality as of the end of 1980.<sup>2</sup> The key finding from the table is that over 200,000 dwelling units are currently built in Ottawa-Carleton. This means that between 61% and 72% of the housing requirements identified in section 2.4 to the year 2001 are currently in place. This includes 72.3% and 71.9% of the ground orientated and non-ground orientated requirements respectively based on an average annual population change of 4,500 persons and 61% and 61.3% of the ground orientated and non-ground orientated requirements based on an average annual population change of 10,500 persons.

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<sup>1</sup>This does not therefore include the additional residential potential Council added to the E.U.C. or the potential added as result of Planning Committee's approval of the Campeau proposal for Marchwood/Lakeside. However as the densities on the Marchwood/Lakeside proposal are lower than those estimated by staff in the Vacant Residential Land Supply Study, the total unit potential does not vary significantly - e.g. an additional 120 ground-orientated and 440 non-ground orientated units.

<sup>2</sup>The estimates for the Cities of Kanata, Nepean and Township of Goulbourn have been modified to reflect the boundary adjustments to these areas on Dec 1, 1978.



Estimated Housing Stock by TypeThe Regional Municipality of Ottawa-Carleton: Dec. 31, 1980TABLE 8

	GROUND ORIENTATED			NON-GROUND ORIENTATED	
	SINGLE	SEMI DUPLEX	ROW	APART- MENT	TOTAL
Ottawa	36,263	13,870	11,634	59,511	121,315
Nepean	13,330	2,914	5,968	4,617	26,829
Gloucester	9,034	2,477	7,088	3,217	21,816
Kanata	2,799	1,408	1,392	89	5,688
Vanier	1,354	1,348	154	5,306	8,166
Cumberland	3,433	696	383	55	4,567
Goulbourn	2,480	669	268	65	3,482
Osgoode	2,534	130	10	20	2,695
West Carleton <sup>1</sup>	2,490	69	10	40	2,605
Rideau	2,426	95	5	65	2,593
Rockcliffe Park	556	15	0	40	586
<u>TOTALS</u>	76,699	23,691	26,912	73,025	200,342

<sup>1</sup>The figures for West Carleton represent the totals for the end of 1979.

### 2.5.2 The rural area will Provide Between 7,000 and 11,500 of the Required new units

The Regional Official Plan assumes that the rural area will grow at the same rate as the Region as a whole. In 1971, the population of the rural portion of the Ottawa-Carleton was 42,180 or 8.94% of the Region's total population. By 1976 this population had grown to 54,080 or just over 10.39% of the Regional total. Thus, the population of the rural area between 1971 and 1976 grew faster than the Region as a whole.

Based on local official plans and recent development approvals,<sup>1</sup> it is apparent that there is sufficient development potential for the rural area to account for roughly 10% of the Region's population. However due to the preponderance of single family units, the population per unit will remain higher than in urban areas, so that the number of new households housed will be approximately 9% of the Region's total. It is therefore estimated that the rural area will provide between 6,950 and 11,500 dwelling units and that almost all of these will be of the single detached type.

### 2.5.3 In the urban area there is a potential 92,500 units on 2,900 net hectares of residential land which are designated for development and are currently vacant

The number of units which could be built in the urban areas is summarised in the 1980 Vacant Residential Land Supply Study,<sup>2</sup> The results of this study are shown in Table 9. Other important observations are:

- . there is a potential for 61,022 ground orientated units and 31,484 non-ground orientated units;

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<sup>1</sup>Since 1977, 419 lots have been created for residential purposes by severance and 314 lots have been created by registered plan of subdivision in village and country lots. In addition as of Jan 1, 1980 there were 3,734 villages and country lots draft approved or pending approval.

<sup>2</sup>This study does not identify vacant parcels less than 1 hectare in size other than those in the central area. The small sites suitable for limited infilling have not been identified and therefore this study understates the actual unit potential.

Table 9

Distribution of Vacant Residential Lands  
and Units by Type and Municipality  
as Identified in the  
1980 Vacant Residential Land Supply Study: Ottawa-Carleton

Municipality	Amount of Land (ha)	Potential Units by Density Type			Total	Density (Units/ hectare)
		Low	Med.	High		
INSIDE GREENBELT						
Ottawa	390.6	2,523	6,673	10,932	20,128	51.5
Nepean	287.5	1,761	4,991	5,237	11,989	41.7
Gloucester	188.2	2,303	2,005	2,162	6,550	34.8
Vanier	8.0	-	38	1,717	1,755	219.4
Rockcliffe	<u>6.7</u>	<u>27</u>	<u>95</u>	<u>-</u>	<u>122</u>	<u>18.2</u>
Sub-Total	881.0	6,614	13,882	20,048	40,544	46.0
OUTSIDE GREENBELT						
Nepean (Barrhaven)	185.7	2,503	1,866	705	5,074	27.3
Gloucester (Orleans)	552.9	4,960	4,547	2,336	11,843	21.4
Cumberland (Orleans)	422.9	3,791	2,987	1,326	8,104	19.2
Kanata	<u>856.4</u>	<u>7,177</u>	<u>12,695</u>	<u>7,069</u>	<u>26,941</u>	<u>31.5</u>
Sub-Total	2,017.9	18,431	22,095	11,436	51,962	25.8
Totals	2,898.9	25,045	35,977	31,484	92,506	31.9

(Total ground orientated units 61,022)



- . there are 25,045 low density units (single and semi-detached) in the inventory. Over the last decade the number of single and semi-detached starts has remained fairly steady (see figure 1) despite a significant fluctuation in the total number of housing starts. If demand for singles and semis remains at a level similar to the last five years, i.e. 1800 units per annum, there may not be sufficient units on the lands currently designated to accommodate low density demand beyond the mid 1990's.<sup>1</sup> However, resubdivisions and downzonings of high density blocks may add to the potential supply.
- . 40,564 units or 43.8% of the potential are located inside the Greenbelt and of these approximately 9,000 units are in four government controlled projects, Woodroffe Demonstration Project, Lebreton Flats, Borden Farm and the CMHC site adjacent to the eastern parkway.<sup>2</sup>
- . 51,902 units or 56.2% of the total potential are located outside the Greenbelt with 5,074, 19,947 and 26,941 units potentially available in Barrhaven, the East Urban Community and West Urban Community respectively.

2.5.4 Between 10,000 and 16,500 mainly non-ground orientated units will be brought on stream through redevelopment

The Regional Official Plan assumes a net gain of 50,000 units through redevelopment. Based on a 25 to 40 year period for the plan, the 50,000 units represent a net gain of 1,250 to 2,000 units per year. At the higher rate this is the equivalent to projects totalling the size of the proposed Lebreton Flats once every two years.

In 1975, the consultants for the Regional Housing Study suggested that the redevelopment assumption in the plan was excessive due to: the existing levels of high density development in the redevelopment areas; inner city resistance to high density development (which during the late 1970's has resulted in a series of inner city neighbourhood plans that discourage major redevelopment) and a change in the form of rapid transit originally anticipated for the Region. i.e. the Region is now implementing a system of bus transitways as opposed to a fixed rail

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<sup>1</sup>The actual demand will fluctuate from year to year depending on changing economic and demographic factors. For example, primarily due to slow local economy and high mortgage rates there were only 2,179 housing starts in the Ontario portion of the CMA in 1980, of which only 857 were singles and semis.

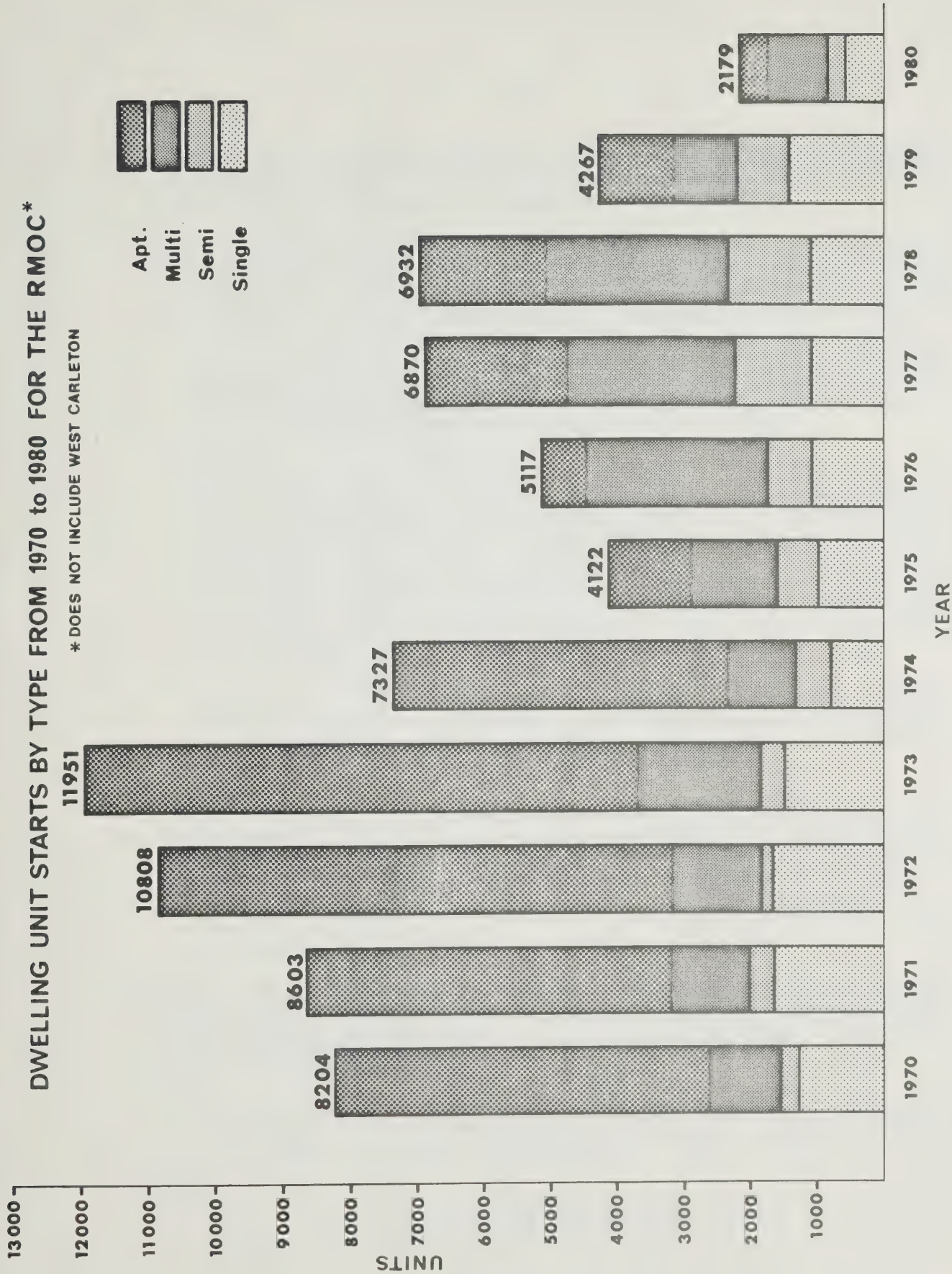
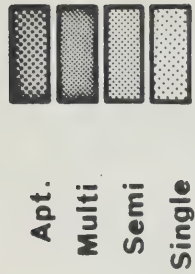
<sup>2</sup>As of the time of this writing the Woodroffe Demonstration, Lebreton Flats and Borden Farms projects are under review. It is likely that the Woodroffe Demonstration and Borden Farms projects will proceed but at reduced densities. The future of the Lebreton Flats project north of Scott Street is uncertain.



FIGURE 1

# DWELLING UNIT STARTS BY TYPE FROM 1970 to 1980 FOR THE RMOC\*

\* DOES NOT INCLUDE WEST CARLETON







system. The consultants suggested a more realistic assumption would be 1,000 units per year which at the time represented about 13% of the Region's annual housing requirements.

An assessment of the potential for redevelopment has not been undertaken by either the Region or area municipalities. However, housing indicators and land use trends suggest that the proportion of housing starts attributable to redevelopment is decreasing. These include:

- . the total regional housing demand in the immediate past (1976-1980) did not increase as was projected by the housing consultants. Housing starts averaged some 5,100 units per year (1976-1980) as compared to the consultants' projection of 7,500 units per year.
- . the total number of housing starts in the Cities of Ottawa and Vanier, the two municipalities most likely to experience redevelopment (with the exception of the Cyrville part of Gloucester), averaged less than 2,000 units per year during the 1976-1980 period. It is estimated that with the development activity that took place in several new communities of the City of Ottawa, (e.g., Riverside Park, the western community and the Greenboro Community), redevelopment accounted for approximately 20-25% of the total number of starts in these municipalities, i.e. between 400 and 500 units per year.
- . development trends have shifted in the inner city neighbourhoods, from urban renewal and large scale redevelopment projects, which were typical in the late 1960's and early 1970's, to small scale rehabilitation, renovation, and infill housing projects.

In the absence of any specific redevelopment figures that are empirically derived, this study will assume that redevelopment will occur at half the number suggested by the consultants. Based on the housing requirements outlined in Section 2.4 this represents a range of between 10,000 and 16,500 units to the end of the planning period or between 475 and 885 units per year. It is expected that, as in the past, these units will largely be non-ground orientated.

#### 2.5.5 There appears to be sufficient lands currently designated for development inside the Greenbelt and in the West, East and Barrhaven Communities outside the Greenbelt to house the anticipated population at least until the mid 1990's

There is sufficient land to house the anticipated population demand until the mid-1990's. This suggests that there should be no reduction in the amount of lands now designated. This is premised on the following:

- . between 61% and 72% of the Region's estimated housing requirement to the year 2001 is currently in place;

- of the total housing requirement, (ranging between 77,180 units at the 4,500 per year population level and 126,885 units at the 10,500 per year population level), 9% or between 6,950 and 11,400 units, (mostly low density, single detached units) will be provided for in the rural areas and another 13% or between 10,000 and 16,500 units (mainly non-ground-orientated) will be provided through redevelopment inside the Greenbelt;
- the vacant residential land supply study indicates that more than 92,000 units can be accommodated on approximately 2,490 ha of vacant residential land. This is well in excess of the net new urban housing requirement of approximately 60,000 at the 4,500 per year population level and about 7% less than the housing requirement of approximately 99,000 at the 10,500 per year population level.

	Annual Popu- lation change <u>4,500 persons</u>	Annual Popu- lation change <u>10,500 persons</u>
Total Housing Demand	77,180	126,885
less Rural Supply	6,950	11,400
less Redevelopment Assumption	<u>10,000</u>	<u>16,500</u>
Net Urban Housing Requirement (units)	60,230	98,985

- 2.5.6 There are sufficient numbers of non-ground orientated units in the potential housing supply to accommodate the anticipated number of non family households to at least 2001 under both the high and low assumptions but only sufficient ground orientated supply to accommodate the anticipated family households under the high assumption to 1998

	Annual Popu- lation change <u>4,500 persons</u>	Annual Popu- lation change <u>10,500 persons</u>
total <u>non-ground</u> orientated demand	28,199	45,542
less redevelopment assumption	10,000	16,500
net non-ground orientated demand	18,199	29,042
potential supply vacant land	<u>31,500</u>	
total <u>ground</u> orientated demand	48,903	81,341
less rural supply assumption	6,950	11,400
net ground orientated demand	41,953	69,941
potential supply vacant land	<u>61,000</u>	



2.5.7 There are several emerging economic and demographic factors which alone or in combination could either work to accelerate or delay the need for additional lands

Some of the important emerging factors and trends which could result in an accelerated need for additional lands include:

- . a continued strong demand for ground-orientated low density housing in spite of a continued increase in non-family household formation;
- . the continued delay in the development of land holdings owned by senior governments where residential development is proposed.

On the other hand, there are several emerging factors which could delay the need for additional residential lands. These include:

- . a more efficient utilization of the existing neighbourhoods and housing stock and land supply through infill housing and rehabilitation;
- . a decrease in the propensity to create new households due to declining disposable incomes and decreasing purchasing power;
- . concern about higher energy costs, mortgage rates and property taxes may result in more compact developments and smaller housing units;
- . continued downzonings and resubdivisions of medium and high density sites which are in ample supply.<sup>1</sup>

These factors were not significant at the time of the 1976 census. Consequently there has been little empirical research or analysis undertaken as to how these factors might affect overall land requirements. It is expected that an adequate assessment of these and other emerging factors will be feasible once the results of the 1981 census are made available and the appropriate data base assembled, in three to four years.

2.6 IT IS NOT LIKELY THAT LANDS ADDITIONAL TO THOSE DESIGNATED FOR FIRST STAGE DEVELOPMENT WILL BE REQUIRED PRIOR TO 1990 AT THE EARLIEST

It has been shown that between 48,900 and 69,900 ground orientated units may be required in the urban areas to accommodate the housing demand to 2001. This represents an approximate urban land requirement of between 1,950 and 2,800 hectares.<sup>2</sup> Estimates from the 1980 Vacant Residential Land Study indicate that approximately 61,000 ground orientated units can be provided on roughly 2,500 hectares of existing vacant residential land inside the Greenbelt, in the West, and East

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<sup>1</sup>As of April 1980, the Planning Department had received 12 subdivision applications proposing a 65% reduction in units in previously approved plans (from 2,477 high and medium density units to 854 medium and low density units).

<sup>2</sup>Based on an average low/medium density of approximately 25 units per net residential hectare (10 units/acre).

Urban Communities and in the Barrhaven sector of the South Urban Community. This is more than sufficient land to accommodate the expected household growth, if the increases are at the low end of the forecast levels; and sufficient land to accommodate the expected growth in population and households at the high level until 1998. It is expected that the actual household growth will fall within these two extremes.

However if the higher population scenario were realized, it would be necessary to service additional lands prior to 1998 in advance of actual need in order to maintain a competitive housing market and not artificially accelerate land costs.

The Federal/Provincial Task Force on the Supply of Serviced Residential Land looked at this issue in detail in 1977-1978.<sup>1</sup> The task force concluded that it is the existing housing stock, which in most large municipalities usually comprises 98-99% of the stock in any one year, that dominates the housing market and establishes at what prices new houses can be sold. In their opinion the key to the long-term stabilization of housing prices was to provide continuously an oversupply of new units relative to demand.

In a report prepared for the Urban Development Institute of Ontario on the Toronto housing market consultants recommended that, in order to ensure competitive housing markets, municipalities provide a sufficient oversupply of land in all geographic locations for a two to three year building program at one time.<sup>2</sup> Applying this criteria to the regional situation would mean that additional lands would be required by 1995 if the high level of population growth was experienced.

In addition to providing for an oversupply situation it will also be necessary to provide additional land to take account of the fact that not all lands that are currently designated for residential purposes will be developed in the time period. In other words it is not likely that 100% of all developable lands will be developed at any one point in time. This report assumes that 10-15% of available lands may not be developed by 2001. This represents in the range of 9,000 to 15,000 units or an additional 3 to 5 year supply based on demand estimates for the next decade. Thus if population grows at the high rate, additional lands will not be required before 1990. It should be noted that at this time population is growing at approximately 7000 persons per year i.e. somewhere between the 4500 and 10500 persons per year assumed by the low and high rates of growth respectively.

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<sup>1</sup>Down to Earth, Report of the Federal/Provincial Task Force on the Supply and Price of Serviced Residential Land, April 1978.

<sup>2</sup>M.M. Dillon, Urban Residential Land Inventory Toronto Housing Market Area prepared for the Urban Development Institute of Ontario, 1977.

2.7 IT WOULD BE PREFERABLE FROM A DEVELOPMENT STRATEGY AND ECONOMIC POINT OF VIEW TO DEVELOP THE AREAS CURRENTLY DESIGNATED PRIOR TO DEVELOPING NEW AREAS SUCH AS THE SOUTH URBAN COMMUNITY

An objective of the official plan provides for the encouragement of public transit over road transportation by developing a limited number of urban communities with employment centres outside the Greenbelt. The development of another community before the West and East Urban Communities are more firmly established could prejudice this important objective.

In addition estimates indicate that it is considerably less expensive to service lands which are currently designated for development and which require only extensions to existing services than it is to develop a new area not contiguous to existing serviced areas. For example, the Regional Works Department has estimated the regional costs (exclusive of local distribution costs) of servicing the expanded East Urban Community with water to be between \$10.475 M and \$14.375 M. The cost of providing additional sanitary sewer facilities is estimated to be \$3.75 M. The cost of servicing the remainder of the West Urban Community is estimated to be \$100,000.<sup>1</sup> For comparison it would cost \$33.0 M<sup>2</sup> to extend trunk sanitary sewer facilities to the South Urban Community and to provide initial trunk sanitary sewer service. An additional \$8.0 M<sup>3</sup> would be required to provide regional water service to the South Urban Community. Though not analyzed in detail it is expected that based on work done for the official plan transportation improvements required for the South Urban Community would also be in excess of the improvements required to extend the transportation facilities to areas adjacent to those already serviced.

2.8 PLANNING FOR THE SOUTH URBAN COMMUNITY MAY HAVE TO BEGIN AS EARLY AS 1985

Despite the fact that the South Urban Community will not be needed until 1990 at the earliest, it will be necessary to begin to plan for the development of this area earlier, as it is expected that it could take approximately 4-5 years to plan and provide services to the South Urban Community. If population growth increases it may be necessary to recommence planning in the South Urban Community by 1985-1986 period.<sup>4</sup>

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<sup>1</sup>Exclusive of costs of upgrading the Glen Cairn Reservoir which may be necessary.

<sup>2</sup>Comprises 21.4 M to extend the West Rideau Collector Sewer from its existing tenures at Highway 16 and Merivale Road and an additional 11.6 M to develop the Mosquito Creek, East Rideau, West Rideau and Jock River initial trunk sewers.

<sup>3</sup>Comprises costs of constructing feeder mains in the community in excess of 16 inches in diameter and the construction of two reservoirs.

<sup>4</sup>Planning for the South Urban Community was initiated in 1975 at which time a complete inventory was undertaken and several land use options developed. This exercise was deferred pending OMB decision of the South Urban Community.



The rate of population and housing growth will be continually monitored in the Residential Lands Supply - Registered Lands reports and if demand for low density housing increases faster than expected Council will be advised. Conversely if demand for low density housing decreases or the supplies of land increase such as through increased resubdivision of blocks of land currently available for medium and high density development, the date at which planning should begin may be retarded<sup>1</sup>, Council would similarly be advised. In either case, it should be possible to complete a comprehensive review using data from the 1981 census prior to the commencement of planning for the South Urban Community.

2.9 SECTION 2.2.3 OF THE REGIONAL OFFICIAL PLAN BE AMENDED TO REFLECT THE FACT THAT RESIDENTIAL LANDS ADDITIONAL TO THOSE DESIGNATED FOR IMMEDIATE DEVELOPMENT WILL NOT BE REQUIRED PRIOR TO 1990

Section 2.2.3 of the Regional Official Plan relates the early 1970 building rates to ground orientated housing demand. It concludes that lands currently designated for immediate development may be sufficient for housing purposes only until 1985 and in order to avoid further shortages for land and housing it will be necessary to commence development of a second stage urban development in the early 1980's.

The analysis presented in this section indicates that the lands designated for immediate development will be sufficient to accomodate the anticipated population and household growth at least to 1990 if not longer. Accordingly, it is recommended that Section 2.2.3 be amended to reflect the timing now envisaged for the second stage of urban development.

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<sup>1</sup>The impact of resubdivision can be significant. For example, if one third of the lands currently designated for medium density development (e.g. 333 out of 1000 ha.) were down zoned to low density at one half the unit coverage per acre, this would result in approximately 6,000 additional low density units which in turn represents a three to four year supply at 1976 through 1980 rates. However this increase in low density units may be attained at the expense of other objectives, e.g. community structure, maintenance of densities, mixture of housing types, modal splits.

## PART 3

3. PHASING WITHIN URBAN COMMUNITIES NOW DESIGNATED FOR DEVELOPMENT3.1 EXISTING POLICIES ARE LIMITED TO THE STAGING OF URBAN COMMUNITIES

Current Regional Official Plan policy provides for only two development stages. The first stage includes all lands inside the Greenbelt, the East and West Urban Communities and Barrhaven. The South Urban Community is contemplated for the second stage and may be required to be brought on stream as early as 1990.

This policy is limited to the staging of communities rather than the phasing of lands within those communities. Though not explicit, this policy implies that area municipalities are responsible for the phasing of development within the urban communities in conjunction with the provision of local and regional services and facilities. This is consistent with the Ontario Municipal Board's position that "the Regional Official Plan should only be a guideline or strategy .... and avoid where possible the danger of becoming a statement of specific controls and rules".<sup>1</sup> Thus a move by the Region to define a more precise and orderly phased sequence for development of lands within the urban communities as is suggested by Council resolution (see Annex A) would represent a departure from existing regional policy.

Another reference to staging is found in Section 2.4.1 New Residential Districts. This is a general statement which indicates that all phasing within new residential districts should be such as to encourage the development of contiguous areas. Though general in nature this statement is sufficient to enable Council to adopt a general regional strategy for development of new communities which may, be implemented at the local level.

3.2 MORE DETAILED REGIONAL POLICIES ARE WARRANTED ONLY WHEN REGIONAL POLICIES AND OBJECTIVES ARE THREATENED BY CURRENT OR PROPOSED PATTERNS OF GROWTH

There are both advantages and disadvantages in defining a more detailed regional phasing program. Briefly the advantages can be summarized as:

- a reduction in capital and maintenance costs for regional services e.g. water, sewer, roads and transit by locating newly developing areas in proximity to existing areas;

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<sup>1</sup>Ontario Municipal Board decision Regional Official Plan, October 29, 1970, p.11

- . a promotion of the town centre concept by encouraging new development to locate adjacent to and in proximity to the newly developing town centres; and,
- . a more precise ability for the Region, the area municipalities and the developers to plan for required investments thereby possibly taking advantage of more favourable borrowing terms which might be available.

The disadvantages of a more rigorous program relate more to possible difficulties in maintaining the effective competition in the housing market. Detailed phasing policies usually imply a reduction in competition which could result in higher prices. The demand-supply situation, particularly for low density dwelling units, suggests that if current trends continue there may not be much leeway for the establishment of detailed phasing policies and in fact additional lands may have to be brought on stream as early as 1990 in order to maintain competitiveness in the housing market.

However a competitive market is not assured simply by the provision of sufficient lands to meet anticipated demand. There is also the need to provide for certain types of land with varying attributes, e.g. varied topography, proximity to schools and business areas etc., as well as for the lands to be held by various developers.

Therefore more detailed phasing policies should only be established where regional interests are identifiable and where regional official plan objectives may be jeopardised by current or proposed development. The regional objectives which could be affected by the introduction of phasing policies appear to be.

- . to encourage new development to locate adjacent to or in proximity to existing development and developing town centres;
- . to ensure all major regional services are available together and are being made available in an efficient manner; and
- . to provide for a competitive housing market by having available at all times sufficient lands for a two to three year building program.<sup>1</sup>

### 3.3 BASED ON A REVIEW OF ALL LANDS CURRENTLY DESIGNATED FOR DEVELOPMENT IT APPEARS THAT MORE DETAILED STAGING POLICIES ARE ONLY REALISTICALLY POSSIBLE IN THE EAST AND WEST URBAN COMMUNITIES

#### (i) Inside the Greenbelt

In 1976 approximately 449,000 persons lived inside the outer limit of the Greenbelt. The development of the 20,000 potential ground-oriented units inside the Greenbelt and three-quarters of the 20,000 high density units identified in the Residential Land Supply Study, will

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<sup>1</sup>See page 21



result in the population inside the Greenbelt increasing by only 18,000 to 21,000 persons or to approximately 470,000 persons in the year 2001. A continuing decline in the average household size from the current level of 2.9 persons per household to 2.4 persons per household in Ottawa-Carleton is the primary reason for the relatively small overall population increase.

This relatively low population increase has implications for the services and facilities currently in place inside the Greenbelt and suggests that, rather than attempting to further curtail growth by staging development, development should in fact be encouraged in order to ensure efficient use of the infrastructure currently in place.

Map 1\* depicts all parcels of vacant residential land inside the Greenbelt in excess of 10 hectares (24.7 acres) and their respective development status as of June 1980. Most of the larger parcels are already subdivided and along with the dispersed pattern of the vacant parcels this effectively limits staging opportunities. Moreover, the Works Department reports that there are no constraints with respect to servicing any of the vacant parcels of land inside the Greenbelt.

From a transportation point of view, the combined impact of the development inside and outside the Greenbelt makes demands for an improved transportation system inside the Greenbelt. It is envisaged that up to the year 2001, the following new road links, as identified in the Regional Official Plan, will be required. Hunt Club extension eastwards and westwards, Vanier Parkway to the McDonald Cartier Bridge, Walkley Road extension to Highway 417, Scott Street extension to Richmond Road, and the Bronson-Portage Bridge link. In addition to these new road links the construction of transitways in all four corridors of the Region will also be necessary along with minor improvements and expansions of the road system currently in place. These improvements are required by the development provided for in the Regional Official Plan inside and outside the greenbelt.

During the approval of plans of subdivision in the Greenboro part of the South Ottawa-Blossom Park area Council phased development by relating permitted development to the limit of the capacity of the existing north-south transportation systems. The proposed reconstruction of Riverside Drive (two locations), the construction of the Hunt Club Bridge, Airport Parkway improvements and the construction of the southeast transitway will make phasing unnecessary in this area. However if phasing is to continue to be applied to development in this part of the Region the present policy should be modified to include all development in South Ottawa/Blossom Park, not just Greenboro.

Land development inside the Greenbelt has been slow in some areas. As noted previously, the senior levels of government own the land upon which approximately 22% of the 40,000 unit potential inside the Greenbelt will be built. These units are on lands in Lebreton Flats, the Woodroffe Demonstration Project, Borden Farm and the CMHC lands adjacent to the Eastern Parkway. Apart from some small scale development south of Wellington Street in Lebreton

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\*Map 1 is found in the pocket attached to the back cover.

Flats, development has not taken place even though proposals have been made. In fact, it is understood that the Woodroffe Demonstration Project, Lebreton Flats and Borden Farm projects are currently under review and, in the case of Lebreton Flats, this may include a change in proposed use. Continuing delays in developing these prime parcels of residential land may result in increased costs for housing inside the Greenbelt and additional land requirements beyond the Greenbelt with the resultant need for the Region to extend services further or earlier than otherwise would be the case.

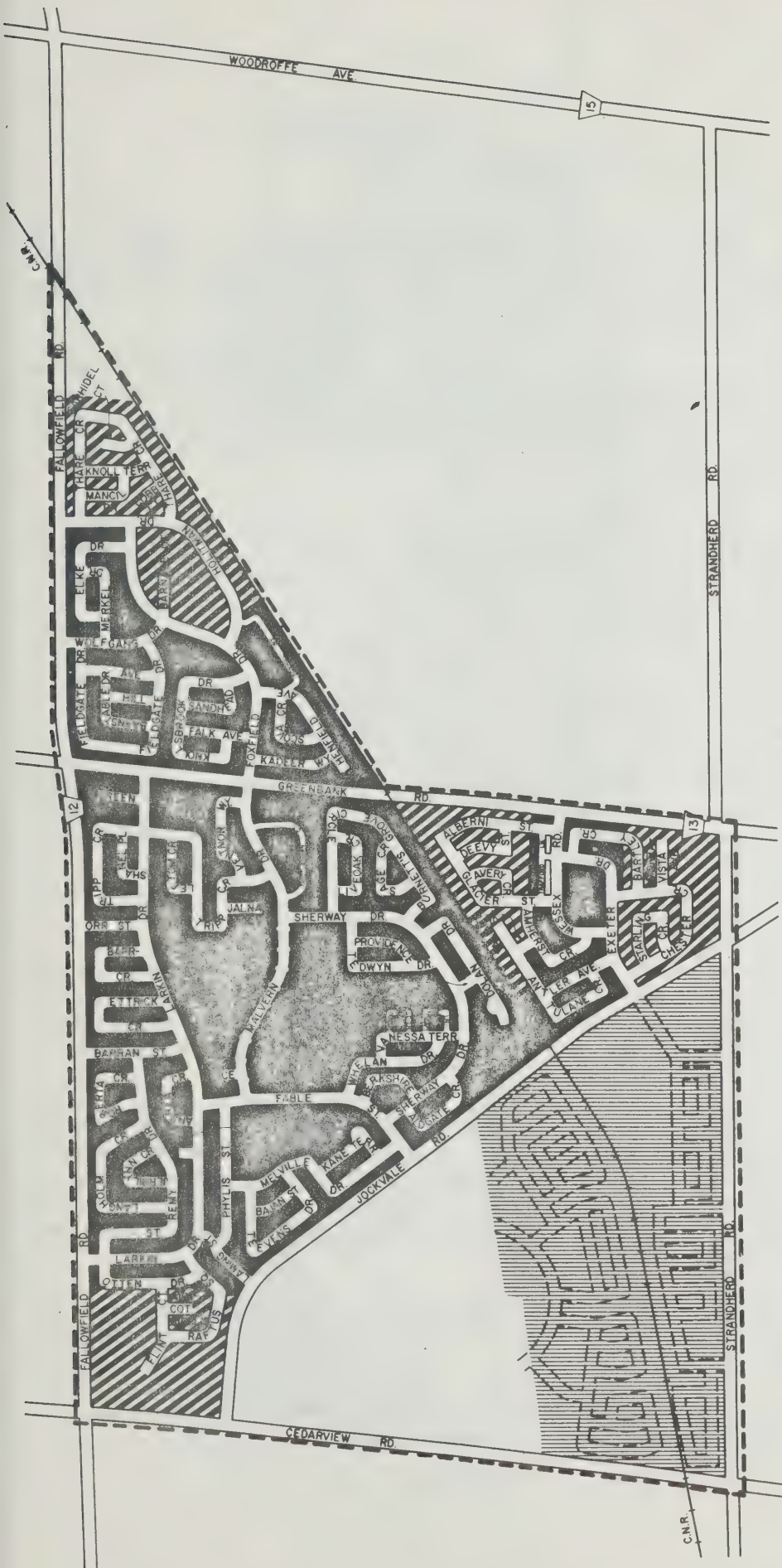
Given the overall demand/supply balance throughout the Region and the need for the development of these parcels simply to maintain a modest growth inside the Greenbelt, these parcels of land should be developed primarily for residential purposes as expeditiously as possible. Furthermore given the housing mix which recent studies have shown to be required there is some justification for increasing the component of low density housing in some of these areas to make them more marketable in the short term.

(ii) Barrhaven

The Regional Official Plan designates the Barrhaven sector of the proposed South Urban Community for immediate development. Currently, there are approximately 7,000 persons in Barrhaven. Despite an ultimate population limit of 25,000 persons, the development of the community is limited to approximately 18,000-20,000 persons because of inadequate local sanitary sewer capacity, which has effectively prevented the development of those lands bounded by Jockvale, Strandherd and Cedarview Roads (see Map 2).





It is understood that the City of Nepean is investigating the possibility of providing sanitary sewer service to these lands by running a trunk sewer extension along Fallowfield Road from the Merivale Trunk Sewer. Although there is the opportunity to delay this connection, thus effectively phasing this part of Barrhaven, it is suggested that no changes be made to the existing policy respecting the immediate development of these lands, for the following reasons:

- . there are no other major servicing constraints which could affect the development of these lands;
- . sufficient north-south capacity can be provided on existing roads between Fallowfield Road and Baseline Road to carry the traffic generated by a population of up to 30,000; and;
- . the development of all the lands in Barrhaven is required to support the services and facilities for which the community was planned.



## MAP 2 - STATUS OF VACANT RESIDENTIAL LANDS IN BARRHAVEN

----- BOUNDARY OF BARRHAVEN COMMUNITY AS APPROVED BY COUNCIL Oct. 9, 1974

- ..... BUILT
- ..... PLANS PENDING
- ..... DRAFT APPROVED
- ..... REGISTERED

Scale 1:18,750





## (iii) West Urban Community

The West Urban Community which comprises the urban part of the City of Kanata currently has a population of approximately 19,000 persons. The Regional Official Plan envisages a population of 75,000 - 100,000 persons when the whole area is ultimately developed.

At the end of 1980 approximately 5,400 units were built in Kanata, with another 5,260 units registered but not built. Of the latter, just over 1,000 were low density units which is estimated to represent a four to five year supply. There are also an additional 9,300 units either draft approved or pending approval.

The Transportation Department reports that the proposed development in the City of Kanata i.e. the entire West Urban Community can be accommodated by the road system currently in place and by improvements thereto. For example, based on certain assumptions regarding modal splits, car occupancy etc., the existing system is capable of carrying traffic generated by a community of approximately 45,000 persons and related employment levels through the Greenbelt. As the population grows beyond this level, the required additional road capacity can be provided by such improvements as the widening of Highway 7, Carling Avenue and Timm Drive and the extension of Knoxdale Road westwards to Connelly Road. Continued development in Kanata will also require improvements to roads inside the Greenbelt, e.g. the reconstruction of Scott Street/ Richmond Road to a four-lane cross-section and the westerly extension of the six-lane section of the Queensway. This need to improve major roads is a normal process for a growing urban area and since it can be provided, no phasing for transportation reasons is recommended.

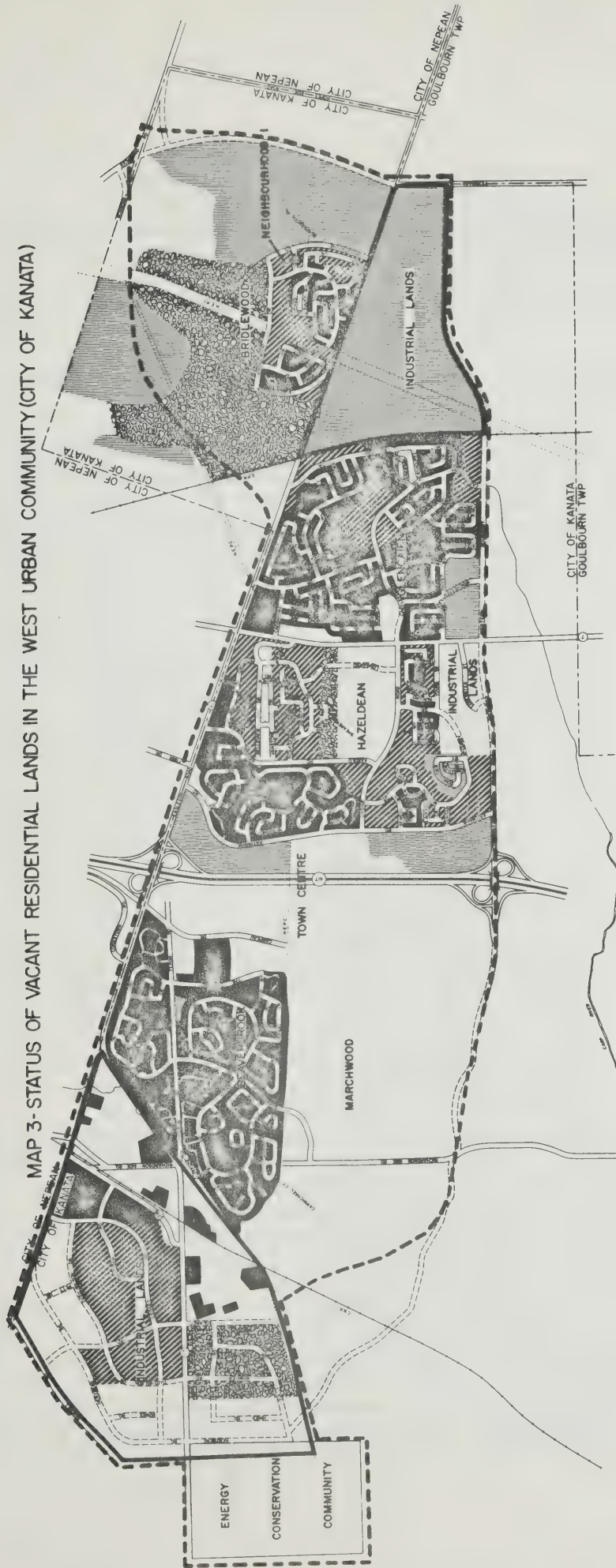
However, as can be seen from Map 3, development in the West Urban Community has taken place in four areas, Beaverbrook, Hazeldean North, Glen Cairn and Bridlewood. Phasing policies could be utilized to consolidate the random nature of development in this community and to direct future growth in a logical and efficient pattern.

Generally, the older parts of the community comprising the Glen Cairn and Beaverbrook communities are built up with the exception of several high density blocks, which are currently under review with a view to their resubdivision? The community of Hazeldean North, between the town centre and Highway 7, has to a large extent been registered and development has begun in several areas.

Four areas in the West Urban community which are designated residential district in the regional official plan may lend themselves to phasing. These areas are:

- . the town centre lands which straddle the Queensway and provide for a mix of residential, commercial and public uses;

MAP 3-STATUS OF VACANT RESIDENTIAL LANDS IN THE WEST URBAN COMMUNITY (CITY OF KANATA)



BOUNDARY OF WEST URBAN COMMUNITY AS APPROVED BY COUNCIL OCT. 9, 1974  
AND MODIFIED BY THE OMB'S ISSUING ORDER OCT. 11, 1976

Scale 1:75,000

- . Bridlewood, other than neighbourhood one which is registered and partially developed;
- . Marchwood/Lakeside, which is currently the subject of an official plan amendment application and;
- . the Energy Conserving Community whose designation was approved by the Provincial Cabinet.

The Kanata Town Centre Secondary Plan includes phasing policies, to be administered by the city. The Town Centre serves a mixed function for which the different uses are mutually supportive. A large portion of the residential component is in the form of high density development, which is unlikely to be developed for quite some time. For these reasons additional phasing policies are not being recommended.

The Bridlewood Community has a capacity of approximately 25,000 persons. To date, only neighbourhood one is registered and approximately 400 units have been built. The rest of the community is either draft approved or plans are pending approval. The Bridlewood Community is located at the south eastern extremity of the West Urban Community and consequently if the thesis is accepted that communities should grow out from the centre in order to support the town centre, it is a logical candidate for phasing policies. However, both regional and local services have already been extended to the site and the community represents one of few remaining large parcels of land in the West Urban Community which is not controlled by Campeau Corporation.

It is suggested that Bridlewood be subject to a limited phasing program the objective of which would be to concentrate development in areas east and north of neighbourhood one prior to the development southwards. In this fashion preference would be given to the lands which are draft approved over those pending approval. Furthermore development will occur adjacent to Glen Cairn and closer to the town centre rather than away from it. The remaining lands south of neighbourhood one should be deferred until the lands noted above are substantially developed.

The Marchwood/Lakeside area lies north of the town centre and west of the major parcel of existing Beaverbrook Community. The Marchwood portion (South of Richardson Side Road) conforms to the Regional Official Plan and the Lakeside part is the subject of a request by the Campeau Corporation to amend the Regional Official Plan. As such a phasing program may be appropriate.

The Marchwood portion however is capable of being serviced by extensions to the existing regional water mains and sanitary sewers. In addition despite the reserve of low density housing potential in Kanata, there is virtually no low density potential available north of the Town Centre close to the rapidly expanding Kanata North Business Park. Consequently, it is recommended that the Marchwood Community be developed as soon as the local and regional planning requirements are satisfied.



The Lakeside portion is the subject of a Regional Official Plan amendment application and detailed planning has yet to be undertaken. The City of Kanata has proposed that much of the Lakeside area be subject to detailed environmental impact assessment prior to development proceeding. This assessment is not likely to be undertaken for some time. Consequently, it is recommended that the Lakeside portion be treated similarly to South Bridlewood and development deferred until Marchwood is substantially developed.

The Energy Conserving Community is located at the northerly extremity of the West Urban Community. Official plan policies provide that development must await the adoption and approval of a secondary official plan. In approving this designation, the provincial cabinet included a list of criteria to ensure these lands are in fact developed as an energy conserving community. Included in these criteria is the requirement that the secondary plan provide for hot water district heating to all housing units. Because the state of district heating technology in North America, particularly as it relates to residential development, is still in its infancy, it is expected that the development of this community will not occur in the near future. In light of this and the fact that the development of the community will require the extensions of regional service, eg. transit through the business park, it is recommended that the development of these lands be also deferred. The approval of the secondary plan by Regional Council and the need to extend regional services will provide opportunities to further consider the phasing of this area.

#### (iv) East Urban Community

The East Urban Community is designated as an urban community of 75,000 persons in the Official Plan. The current population is approximately 22,000 persons and is primarily accommodated in the village of Orleans, Queenswood Village and Queenswood Heights and in Convent Glen. These areas have the potential to accommodate approximately 35,000 persons at full development.

At the end of 1980, approximately 5,350 units were built in the East Urban Community, with another 4,545 units registered but not built. Of the latter, approximately 1,350 were low density units available for development. Based on past rates of growth this represents a four to five year supply.

The development status of vacant parcels of residential land is illustrated on Map 4. Development has already occurred in Orleans, Convent Glen, Queenswood Village and Queenswood Heights. In the lands defined by Regional Council for development 3 areas have yet to be developed.

#### MAP 4- STATUS OF VACANT RESIDENTIAL LANDS IN THE EAST URBAN COMMUNITY



Scale 1:20,000

BOUNDARY OF EAST URBAN COMMUNITY AS APPROVED BY COUNCIL Oct. 9, 1974 AND AMENDED BY AMENDMENT 17, Oct. 22, 1980



These include two areas in Gloucester; i.e. the lands south of Innes and west of Pagé Road and the lands bounded by the Greenbelt boundary, Notre Dame Street, Innes Road and the Township line. In the Township of Cumberland the lands lying east of the 10th Line Road have not been developed. These parcels were recently added to the urban community and are able to house approximately 45,000-48,000 additional persons.

Though the Official Plan provides for a population of 75,000 in the East Urban Community, significant transportation and servicing constraints may limit development until the constraints are overcome.

A primary concern is the capacity of the road system which links the East Urban Community to the rest of the urban area inside the Greenbelt. This corridor is serviced by three existing roads, Highway 17, which is now being widened to four lanes through the Greenbelt, St. Joseph Boulevard (R.R.34) and Innes Road (R.R.30). These facilities along with improvements to them, e.g. the reconstruction of Innes Road and St. Joseph Boulevard through the Greenbelt to a four-lane cross-section and the upgrading of Highway 17 to freeway standards will provide sufficient capacity to provide for a population of approximately 55,000 persons. Transportation demands from a larger population will require the construction of an entirely new link, the Ottawa River Parkway East, which will connect to Hemlock Road which will require widening. This facility is shown in the Official Plan as a proposed major road, and part is proposed to be constructed in the near future by the NCC. However construction in its entirety is not yet committed. Given this situation it is recommended that a phasing program be implemented whose object would be to limit approved development to estimated capacity (i.e. approximately 55,000) of the east-west transportation corridors currently in place along with their planned improvements. In this fashion, planned development could proceed in one or more areas with population thresholds defined based on the phasing requirement and services and facilities planned and built accordingly.

The three areas where phasing is possible are:

- i) in the City of Gloucester in the area north of Innes Road (noted on Map 4 as Area 1)
- ii) in the City of Gloucester in the area south of Innes Road and west of Pagé Road (noted on Map 4 as Area 2)
- iii) in the Township of Cumberland east of the 10th line, (noted on Map 4 as Area 3)



A phasing policy for these lands could be developed in conjunction with a regional servicing strategy. The Regional Works Department have determined that water supply can be made available to areas 1) and 3) (above) in the following ways. (Area 2 is already provided with water services).

- i) By building the water mains in the road allowances of the extension of Orleans Boulevard in the City of Gloucester. This could not be constructed until plans of subdivision were registered and construction commenced. This is the most economical method of providing service but would favor the development of the Gloucester lands (area 1) over those in Cumberland (area 3).
- ii) By providing a temporary pumping station on St. Joseph Boulevard at a regional cost of \$190,000. This facility would have limited capacity and would therefore only service one-third of area 3. This option would however allow for the partial development of lands in Cumberland concurrent with the partial development in Gloucester e.g. the lands bounded by Innes to the south, Boyer to the west and Notre Dame St. to the north.
- iii) By building water mains in the existing road allowances (Belcourt Boulevard or Boyer Road and Innes Road) at an additional regional cost of \$1.9M. This option would allow either partial or full development of the lands in Cumberland along with partial or full development of the lands in Gloucester.

Of the three options, the second is preferred for the following reasons:

- . it would allow for the development of two communities of approximately 8,500 to 10,000 person each, in two different municipalities.
- . development could occur close to the town centre lands and thereby provide a population for the development of the town centre and;
- . it would provide for greater competition in the housing market.

The remaining residential lands in the East Urban Community including the land west of Boyer Road, the land south of Innes Road, and the southerly two thirds of the land in the Township of Cumberland should be deferred pending the resolution of the transportation concerns and until the lands noted above are substantially developed.

#### 3.4 RESPONSIBILITY TO DETAILED PHASING POLICIES WHERE REQUIRED SHOULD REMAIN WITH THE AREA MUNICIPALITIES

The analysis in 3.3 above, shows that more detailed phasing policies are warranted only in the East and West Urban communities. In the case of the West Urban Community the overall objective is to consolidate development which previously had occurred in three different municipalities and to provide support for the development of the town centre. The creation of a strong town centre, particularly with a substantial

employment is a major regional concern. In the East Urban Community, the objective of phasing is required to ensure that development does not occur beyond the capacity of the transportation system to handle the anticipated demands resulting from the population growth. This is a major regional concern.

Two general approaches may be used to provide for more detailed land phasing policies. These are:

- . for the Region to amend its official plan to provide for more detailed phasing policies;
- . for the area municipalities to implement more detailed policies through their respective official and secondary plans.

Of the two approaches the latter is the preferred for the following reasons:

- . with the exception of most recent additions to the East Urban Community regional piped services are generally in place to the boundary of major underdeveloped areas.
- . the provision of new regional transportation facilities generally will affect a large area and will provide a substantial increase in capacity. It is therefore difficult to justify phasing a relatively small area on the basis of a need for a major transportation improvement.
- . other services and facilities such as police and fire protection, libraries, schools, day care, parkland, community centres and local roads and sewers, which the area municipalities co-ordinate and which should be provided along with the regional services; will be the determinants of local staging policies.

Therefore it is recommended that where phasing is required it should be provided for in area municipal official plans and secondary plans which are approved by Regional Council and implemented through Regional Council approval of plans of subdivision and condominium. If the appropriate phasing policies are not adopted by the respective area municipalities Council has the power through Section 2.4.1(ii) of the Regional Official Plan to not approve plans of subdivision which do not "encourage the development of contiguous areas, so that its development does not occur to the extent anticipated, large areas are not left vacant within a residential district to which services and facilities have been provided".

## PART 4

4. RECOMMENDATIONS

- 4.1 That Section 2.2.3 of the Regional Official Plan be amended to reflect that fact that residential lands additional to those designated for immediate development will not be required prior to 1990 at the earliest.
- 4.2 That the East and West Urban Communities be phased generally as indicated in Section 3.3 to be administered through local official and secondary plans.
- 4.3 That the phasing program which now controls development in the Greenboro Community be rescinded. If it is Council,s intention to continue phasing development in this area, it is recommended it be applied to all development in the South Ottawa/Blossom Park area.
- 4.4 Council approach the Federal and Provincial governments with a view to getting an early start on the development of residential parcels in their ownership.



## ANNEX A

WHEREAS the Regional Official Plan as approved by Council called for designation of lands sufficient to house 1,000,000 people in the regional area, and included urban communities outside the Greenbelt of approximately 100,000 persons in Kanata, 35,000 in in Orleans, 100,000 in the South Urban Community, with a provision that Orleans could subsequently grow to 50,000 providing certain conditions were satisfied;

AND WHEREAS the Ontario Municipal Board subsequently amended that plan to limit development in the South Urban Area for 20-25,000 people and increased the permitted size of the Orleans Area to approximately 75,000 persons;

AND WHEREAS the Cabinet of the Province of Ontario subsequently amended the provision of the plan by removing the requirement of an amendment to the Regional Plan of the Ottawa-Carleton and including an additional Cadillac-Fairview subdivision of approximately 8,000 persons in the Kanata growth area;

AND WHEREAS this has resulted in land sufficient for approximately 1,050,000 persons being included in the Regional Official Plan as suitable for development with no plan of staging;

AND WHEREAS current population projections utilized by the Province of Ontario and Regional Planning Department indicate that the Region is likely to have a population of only 785,000 by the turn of the century.

AND WHEREAS the areas currently designated for development include lands never recommended nor extensively studied by the Regional Planning Department;

AND WHEREAS Council should extensively study all the lands in question before finally committing them to development:

AND WHEREAS it is unwise and uneconomic to have development occur at random throughout the designated areas throughout the planning period;

THEREFORE BE IT RESOLVED that the Planning Department be instructed to:

- (a) review the lands designated for development in urban communities outside the Greenbelt with a view to developing an orderly and staged sequence for development of the various lands;
- (b) review all lands currently designated for development in the urban communities outside the Greenbelt during preparation of the structure plans for the Orleans and South Urban Areas and during consideration of district plans and subdivisions in the Kanata area with a view to recommending deletion or substitution of lands inappropriately designated.
- (c) review all lands currently designated for development inside the Greenbelt.



## ANNEX B

### HOUSEHOLD PROJECTIONS

#### 1. Introduction

Past evidence indicates that population growth in itself is not sufficient information for the purpose of estimating residential land requirements. Rather, household formation is a function of the age structure of the population in combination with the rate at which each age group forms households.

Therefore, in this section, the population forecasts are converted to household forecasts for the Region.

Much of the background data on population and household trends has been covered in two background reports: 1) the Regional Population Forecast<sup>1</sup> and 2) the 1976 Census Review<sup>2</sup>. The reader is referred to both of these documents for a more thorough discussion of trends.

#### a) Data Source

The 1976 Census is the major data source. In the 1976 Census the term household was defined as a person or a group of persons who occupy a dwelling unit and do not have a usual place of residence elsewhere in Canada. It usually consists of a family group with or without lodgers. However, it may consist of two or more families sharing a dwelling, a group of unrelated persons or one person living alone. Household members who are temporarily absent are considered as part of their usual household. Therefore, every person is a member of only one household.

All data in this report refer to private households as opposed to collective households such as university residences, hospitals and prisons. The number of private households is equivalent to the number of occupied dwelling units and every household has one and only one designated household head, over the age of 15 years. Therefore, all private households are defined as one of the following:

##### 1. Family Household

###### (a) one family household

- traditional husband/wife
- commonlaw husband/wife
- lone parent and child(ren)

###### (b) multiple family household

- more than one census family

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<sup>1</sup>Population Forecasts, Ottawa-Carleton; 1976-2001, Regional Municipality of Ottawa-Carleton, September 1980.

<sup>2</sup>1976 Census Review of Ottawa-Carleton, Regional Municipality of Ottawa-Carleton, May 1980.



## 2. Non-family Household

(a) one person

(b) more than one person but not a census family

b) Past Trends

Table B1 summarizes pertinent household data for the period 1961 to 1976. Between 1961 and 1976, the population of the RMOc increased by a total of 145% while the number of households increased by 189%. The average household size was thereby reduced from 3.9 to 2.9 persons per private household. Also, Table B1 indicates that while the rate of population increase declined, the rate of household formation continued to increase.

TABLE B1							
POPULATION AND HOUSEHOLDS, R.M.O.C.							
1961 to 1976							
	1961	% Change 1961-66	1966	% Change 1966-71	1971	% Change 1971-76	1976
Population	358,410	15.4	413,692	14.1	471,931	10.3	520,450
Households	92,090	21.8	112,188	23.2	138,175	26.1	174,300
Persons/occupied Private household	3.9		3.7		3.3		2.9
% Single person Households	8.9		12.6		14.7		21.0

This increasing disparity is mainly due to a rapid increase in single person households. Table B1 shows that single person households increased from 9% to 21% of total households over a 15 year period. A combination of factors has contributed to this trend. A major influence is the maturing post war 'baby boom' population reaching the age of household formation. In addition, there has been an increase in the propensity to form households for all age groups. The propensity to form a private household is a measure by age category of the likelihood of a person being the head of a household. The increase between 1971 and 1976 is documented in Table B2.

<u>TABLE B2</u>		
<u>PROPENSITY TO FORM A PRIVATE HOUSEHOLD</u>		
<u>ONTARIO PORTION OTTAWA-HULL CMA; 1971, 1976</u>		
Age of Head of Household	Year	
	1971	1976
15-24	.1135	.1603
25-34	.4695	.4919
35-44	.5107	.5345
45-54	.5342	.5385
55-64	.5662	.5812
65 years +	.5312	.5907
TOTAL	.2937	.3343

## 2. Methodology

### a) Information Requirements

The methodology employed in projecting households by ground orientation involves the following steps and information requirements:

- i) selection of an appropriate Regional population forecast by five year intervals showing the population structure.
- ii) development of the propensity to form households by the age of the household head and its application to the population forecast.
- iii) estimation of the distribution of dwelling units by structural type.

### i) Population forecast

A total of six population forecasts have been investigated as outlined in the report. These result from the application of six different net migration scenarios and the associated rate of job formation. In each case there is a distinct difference between the age structure at the beginning of the projection period and the age structure at the end. In general, there is a decrease in the proportion of the population less than 35 years old and an increase in the proportion greater than 35 years. This changing population structure is significant since the propensity to form a household changes with age. This is discussed below.

ii) Propensity to form households

The propensity to form a household is expressed as the proportion of an age category which is likely to be a head of household. Therefore, the propensity to form a household at any given time for a person 35 to 44 years of age say, is derived as follows:

$$\frac{\text{number of household heads 35-44 years}}{\text{total population 35-44 years}}$$

More detailed propensity estimates take into account sex and marital status as these, along with age, are considered to be the most significant factors.

Table B3 shows household propensities for the Ontario portion of the Ottawa-Hull CMA for 1971 and 1976. Every age category experienced an increase during this period resulting in a total increase in the propensity to form households from approximately .29 to .33.



TABLE B3PROPENSITY TO FORM A PRIVATE HOUSEHOLD BY AGE OF HEAD ANDTYPE OF HOUSEHOLD; ONTARIO PORTION OF OTTAWA-HULL CMA

AGE OF HEAD OF HOUSEHOLD	PRIVATE HOUSEHOLDS			
	Total	Family	Non-Family	
			Total	Single Person
15-24				
1971	.1135	.0673	.0461	.0227
1976	.1603	.0713	.0889	.0501
25-34				
1971	.4695	.3934	.0761	.0531
1976	.4919	.3633	.1285	.0944
35-44				
1971	.5107	.4597	.0509	.0393
1976	.5345	.4687	.0658	.0538
45-54				
1971	.5342	.4658	.0686	.0521
1976	.5385	.4592	.0793	.0657
55-64				
1971	.5662	.4232	.1430	.1045
1976	.5812	.4303	.1509	.1260
65 years+				
1971	.5312	.2851	.2461	.1859
1976	.5907	.2925	.2981	.2543
TOTAL				
1971	.2937	.2316	.0621	
1976	.3343	.2422	.0922	

The major increases in propensity between 1971 and 1976 occurred for the 15 to 24 year age group and the population over 65 years. In both cases this was largely attributable to an increasing propensity to form single person, non-family households.

The most obvious difficulty arises in ascribing propensities by age group to future populations. Some projection techniques use trends from a past period to estimate rates of change in a future period.<sup>4</sup> For example, the modified exponential method assumes that the headship rates in all age groups will continue to rise or fall but at a decreasing rate. This technique therefore assumes that past trends will continue and is limited by the extent to which historical data are available.

An alternative technique considers the factors involved in influencing the propensity for any particular age category to form households.<sup>5</sup> This technique would consider social factors, such as an increase in the divorce rate resulting in new households, economic factors such as increased prosperity resulting in an individual's ability to form a private household and so on. Not only is information required concerning functional relationships between the factors and the propensity but also an appreciation of future trends in each of these factors is required.

In this report household propensities are kept constant at their 1976 levels. It was felt that to assume a continuation of trends of the 1971 to 1976 period could not be rationalized based on current evidence. For example, it has been established that in every age group the propensity to form households increased due mainly to an increase in single person households. In the under 25 year age group this increase may have been a result of high enrollment in post secondary institutions, affordability of accommodation, and moderate unemployment rates. Each of these factors has changed somewhat since the early 1970's and may result in a lower probability of separate household formation.

Conversely, some of the experiences of this age group concerning the high incidence of single person households may be carried with them to cause the household propensity of the 25 to 34 year old group to increase at a future date. This would imply a cultural factor specific to a particular generation.

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<sup>4</sup>See: Methods of Projecting Households and Families, Population Studies, No. 54. Department of Economic and Social Affairs. United Nations, New York, 1973, for a detailed discussion of techniques.

<sup>5</sup>An example of this, in a very general sense, is the household projection developed by the Regional Municipality of Waterloo, 1978.

Given the numerous contradictory influences on the propensity to form households it seemed most appropriate to apply a constant rate. At a future date, when the 1981 census data are available, it will be possible to review this assumption.

### iii) Distribution of households by type

Under the census definition of households, there exists a one to one relationship between private households and private occupied dwelling units. Therefore, households and dwelling units are one and the same.

The final step of this exercise required the separation of future housing requirements into ground oriented and non-ground oriented dwelling units as referred to in the Region's Official Plan. Ground oriented units are defined as including single detached, single attached, duplex and movable dwellings. Non-ground oriented units include apartment dwellings. The 1976 census published data concerning dwelling units by age of head showing structural type and tenure. These data are summarized in Table B4.

<u>TABLE B4</u>		
<u>ORIENTATION OF HOUSING, RMOC; 1976</u>		
<u>Age of Head</u>	<u>% Ground Oriented</u>	<u>% Non-ground Oriented</u>
15-24	23	77
25-34	58	42
35-44	80	20
45-54	78	22
55-64	67	33
65+	49	51
<hr/>	<hr/>	<hr/>
Total	62	38
Population 15+		

The main observation, as would be expected, is that the 35 to 54 year age group has the highest level of ground oriented unit occupancy at about 78% of the total. This is largely due to the fact that ground oriented units are required and may be affordable at this stage in the family cycle.



The 15 to 24 year age group is more likely to form non-ground oriented households. This is because of the high proportion of single person households and is reflected again in the 65 year and over age category. Nevertheless, the largest absolute number of non-ground oriented units occurs in the 25-34 year age group where the actual total population is large.

Since household propensities are being held constant and due to the lack of data supporting an alternative, ground orientation of housing was also kept constant at 1976 levels.

### 3. Household Projection

#### a) Number of Households

The projected population in each age group has been multiplied by the 1976 propensity to form households that is associated with that age group. These were then summed to arrive at a total number of households for each net migration scenario. The results are presented in Table B5a and B5b by five year intervals.

In each case the rate of household formation decreases over the projection period. The major influence in the decrease in the rate of household formation is the decrease in the rate of population growth, which is explained elsewhere. However, it is also due to the changing population structure. The rate of growth in households peaked between 1971 and 1976. It was during this period that the majority of the post war 'baby boom' population reached the age group 15 to 24. Their impact on household formation was most significant at this time. As this group matures, the additional household formation associated with its size will be progressively less significant.

#### b) Type of Households

In Table B6 the 6 population scenarios have been translated into household forecasts by ground orientation using 1976 propensities to form particular housing types. In total, non-ground oriented housing will experience a minor decrease from approximately 38% to 35% of the total housing demand. This is due to an absolute increase in demand for the ages 35 years and over.

TABLE B5

## OCCUPIED DWELLINGS BY AGE OF HEAD SHOWING STRUCTURAL TYPE AND

TENURE, OTTAWA-CARLETON, 1976

AGE OF HEAD	TOTAL OCCUPIED PRIVATE DWELLINGS	TOTAL		SINGLE DETACHED		SINGLE ATTACHED		APARTMENT		DUPLEX		MOVABLE	
		OWNED	RENTED	OWNED	RENTED	OWNED	RENTED	OWNED	RENTED	OWNED	RENTED	OWNED	RENTED
15-24 % OF TOTAL	17,045	1,100 6.45	15,945 93.55	440 2.58	655 3.84	265 1.55	1,265 7.42	260 1.53	12,895 75.65	45 0.26	1,115 6.54	85 0.50	15 0.09
25-34 % OF TOTAL	44,130	17,370 39.36	26,760 60.64	10,260 23.25	1,905 4.32	4,805 10.89	5,785 13.11	1,465 3.32	17,235 39.06	495 1.12	1,805 4.09	340 0.77	20 0.05
35-44 % OF TOTAL	32,795	20,850 63.58	11,945 36.42	15,850 48.33	1,350 4.12	3,175 9.68	4,400 13.42	1,065 3.25	5,550 16.92	565 1.72	635 1.94	185 0.56	15 0.05
45-54 % OF TOTAL	31,675	20,870 65.89	10,805 34.11	16,865 53.24	1,135 3.58	2,025 6.39	3,285 10.37	1,250 3.95	5,835 18.42	585 1.85	545 1.72	140 0.44	5 0.02
55-64 % OF TOTAL	25,325	15,500 61.20	9,825 38.80	12,590 49.71	655 2.59	1,055 4.17	1,495 5.90	1,185 4.68	7,185 28.37	545 2.15	485 1.92	135 0.53	5 0.02
65+ % OF TOTAL	23,340	10,660 45.67	12,680 54.33	8,385 35.93	485 2.08	650 2.78	670 2.87	960 4.11	10,970 47.00	615 2.63	550 2.36	55 0.24	5 0.02
TOTAL % OF TOTAL	174,310	86,355 49.54	87,955 50.46	64,390 36.94	6,190 3.55	11,975 6.87	16,900 9.70	6,195 3.55	59,670 34.23	2,845 1.63	5,135 2.95	950 0.55	60 0.03

Table B5a

## HOUSEHOLD PROJECTIONS, RMOC; 1976-2001

AVERAGE ANNUAL POPULATION INCREASE	ANNUAL NET MIGRATION	1976	1981	1986	1991	1996	2001
4,500	2,000	174,300	197,505	218,493	235,900	249,725	260,938
5,700	3,000	174,300	199,149	220,327	241,707	257,888	271,625
6,900	4,000	174,300	200,839	225,808	247,638	266,211	282,475
8,100	5,000	174,300	202,482	229,421	253,447	274,369	293,153
9,300	6,000	174,300	203,762	233,126	259,329	282,691	304,020
10,500	7,000	174,300	205,808	236,759	265,210	290,865	314,715



Table B5b

## AVERAGE ANNUAL INCREASE IN HOUSEHOLDS, RMOC,; 1976-2001

AVERAGE ANNUAL POPULATION INCREASE	ANNUAL NET MIGRATION	1976-1981	1981-1986	1986-1991	1991-1996	1996-2001	1976-2001
4,500	2,000	4,641	4,198	3,481	2,765	2,243	3,466
5,700	3,000	4,970	4,236	4,276	3,236	2,747	3,893
6,900	4,000	5,308	4,994	4,366	3,715	3,253	4,327
8,100	5,000	5,636	5,388	4,805	4,184	3,757	4,754
9,300	6,000	5,892	5,873	5,241	4,672	4,266	5,189
10,500	7,000	6,302	6,190	5,690	5,131	4,770	5,617

Table B6

HOUSEHOLD PROJECTIONS, RMOC; 1976-2001

AVERAGE ANNUAL POPULATION INCREASE	GROUND ORIENTATION	1976	1981	1986	1991	1996	2001
4,500	Ground Oriented Non-Ground Oriented	108,440 65,860	123,264 74,241	138,107 80,836	151,394 84,506	161,965 87,760	169,086 91,852
5,700	Ground Oriented Non-Ground Oriented	108,440 65,860	124,243 74,906	139,473 80,854	155,108 86,599	167,305 90,583	176,717 94,908
6,900	Ground Oriented Non-Ground Oriented	108,440 65,860	125,249 75,590	142,634 83,174	158,901 88,737	172,749 93,468	193,894 98,581
8,100	Ground Oriented Non-Ground Oriented	108,440 65,860	126,224 76,258	144,871 84,550	162,617 90,831	178,090 96,279	190,966 102,187
9,300	Ground Oriented Non-Ground Oriented	108,440 65,860	127,226 76,536	147,163 85,963	166,419 92,960	183,538 99,153	198,156 105,864
10,500	Ground Oriented Non-Ground Oriented	108,440 65,860	128,204 77,604	149,410 87,349	170,143 95,667	188,887 101,978	205,726 108,987



REGISTERED  
DRAFT APPROVED  
PLANS PENDING  
NO PLANS

